1   CLAIMS

2

3   1.   Computing means having a software agent for

4   representing a person in the virtual environment, the

5   software agent comprising:

6   one or more application specific modules each of which

7   represents application specific features of the agent;

8   a core module which contains one or more functional

9   groups which define common or generic features of the

10 agent, said features at least in part facilitating inter-

11 agent communication, such that inter-agent communication

12 supports communication between a combination of the one

13 or more application specific module and the core module.

14

15 2.   Computing means as claimed in Claim 1 wherein, the

16 functionality of the functional group comprises one or

17 more of the following, belief management, user profile

18 management, agent-user communication, module management,

19 basic generic reasoning tools and/or between agent module

20 to module communication.

21

22 3.   Computing means as claimed in claim 1 or claim 2

23 wherein, the core module is provided with method means

24 which provide the one or more functional groups.

25

26 4.   Computing means as claimed in any preceding claim

27 wherein, the functionality of the functional group

28 correspond to a set of labels.

29

30 5.   Computing means as claimed in any preceding claim

31 wherein, communication means are provided to facilitate

32 communication between application specific modules in

33 different agents.

1

2 6.   Computing means as claimed in any preceding claim
3 wherein, the core module acts as an interface between
4 external devices and the at least one application
5 specific module.

6

7 7.   Computing means as claimed in any preceding claim
8 wherein the specification of message conversation
9 protocols and the specification of primitive message
10 semantics are implemented in separate modules.

11

12 8.   Computing means as claimed in claim 7 wherein, the
13 core module provides primitive semantics for defining
14 communication.

15

16 9.   Computing means as claimed in any preceding claim
17 wherein, the application specific module(s) specify
18 message conversation protocols.

19

20 10.   Computing means as claimed in any preceding claim
21 wherein, the software agent is further provided with an
22 inter-module communications means.

23

24 11. Computing means as claimed in claim 10 wherein, said
25 inter-module communications means connects together all
26 application specific modules and the core module in the
27 agent.

28

29 12.   Computing means as claimed in claim 10 or claim 11
30 wherein , the inter-module communication means is
31 provided with one or more function calls.

32

1   13. Computing means as claimed in any one of claims 10
2   to 13 wherein, the inter-module communication means
3   provides for communication between functions in different
4   modules of an agent.
5
6   14. Computing means as claimed in claim any one of
7   claims 10 to 14 wherein, the inter-module communication
8   means provides for mapping a request from a first module
9   to a method means in a second module.
10
11 15. Computing means as claimed in claimed in claim 14
12 wherein, said request from said first module comprises a
13 label specifying a function and said method means in a
14 second module corresponds to the specified function.
15
16 16. Computing means as claimed in any preceding claim
17 wherein, the agent further comprises an address resolving
18 means for resolving an address in a message to one of
19 said plurality of modules.
20
21 17. Computing means as claimed in any preceding claim
22 wherein said agent further comprises a transfer means for
23 transferring messages from said resolved modules such
24 that the messages are interleaved to allow an agent to be
25 simultaneously involved in multiple conversations with
26 other agents.
27
28 18. Computing means as claimed in any preceding claim
29 wherein, the computing means is one or more computer.
30
31 19. Computing means as claimed in any preceding claim
32 wherein, the computing means is one or more personal
33 digital assistant.

1

2   20.   Computing means as claimed in any preceding claim

3   wherein, the computing means is one or more mobile

4   communications device.

5

6   21.   Computing means as claimed in any preceding claim

7   wherein, the computing means is distributed across a

8   plurality of computing devices.

9

10   22.   A method of performing functions in the software

11   agent of the computing means defined in any of claims 1

12   to 21, the method comprising the steps of:

13   receiving a request specifying a function;

14   mapping said request to a module method corresponding to

15   the specified function; and

16   invoking said module method.

17

18   23. The method of claim 22 wherein, said request

19   comprises a label specifying said function.

20

21   24. The method of claim 22 or claim 23 wherein, the step

22   of invoking said module comprises the steps of:

23   receiving a request comprising a label;

24   looking up the label in a table; and

25   calling a method corresponding to the label.

26

27   25.   The method of any of claims 22 to 24 wherein the

28   step of invoking said module further comprises the step

29   of selecting a highest priority method corresponding to

30   the label.

31

1   26. The method of any of claims 22 to 25 wherein, the

2   method of invoking said module further comprises the step

3   of returning a value to the originator of the request.

4

5   27. A method of inter-agent communication between

6   software agents of the computing means defined in any of

7   claims 1 to 21, the method comprising the steps of:

8   receiving a message comprising an address from a first

9   agent;

10 resolving said address to one of a plurality of modules

11 in a second, receiving agent; and

12 transferring the message to the resolved module.

13

14 28. The method of claim 27 wherein said address

15 specifies the module.

16

17 29. The method of claims 27 and 28 wherein, the method

18 further comprises the steps of communicating with an

19 external device by:

20 identifying the device that a user is employing;

21 mapping said device to a set of media types; and

22 initiating the delivery of media to said device

23 responsive to the mapped set.

24

25 30. The method of claims 27 to 29 wherein, the method

26 further includes the step of limiting the set of media

27 types based on user preferences.

28

29 31. A computer program comprising program instructions

30 for causing a computer to operate a software agent as

31 claimed in any of claims 1 to 17.

32

1   32.   A computer program comprising program instructions
2   for causing a computer to perform the method of claims 22
3   to 26.
4
5   33.   A computer program comprising program instructions
6   for causing a computer to perform the method of claims 27
7   to 30.